REMARKS

Claims 1-6, 8-16, 18-29 and 31-50 are now pending.

Claims 1-6, 8-16, 18-29, 31, 34-36, 43, 45, 47 and 48 are rejected under 35 U.S.C. § 102(b) as allegedly being clearly anticipated by U.S. Patent No. 4,463,766 ("Arthur").

Independent Claim 1 is directed to a cigarette manufacturing apparatus comprising a novel combination of features that include a tobacco rod maker, a tipper, and a transfer apparatus. Each of the tipper and the rod maker comprises a plurality of devices for monitoring and a plurality of devices for affecting parameters of the rod maker, the tipper and/or the cigarettes being manufactured, wherein one or more of the monitoring devices and the parameter affecting devices both monitors and affects parameters. A controller controls the plurality of devices on the tipper and the rod maker by varying one or more parameters of the rod maker, the tipper and/or the cigarettes being manufactured in response to conditions monitored by one or more of the devices. The novel combination of features recited in Claim 1 also includes a field bus, wherein the plurality of devices and the controller each are connected to the field bus.

The Office Action, at paragraph 1, refers to Arthur et al. for a disclosure of a first motor that controls a rod-cutting device, and a second motor that drives the garniture tape. The Office Action further refers to a device disclosed in Arthur that senses the speed of both motors by receiving pulsed signals directly or indirectly from a rotary part on the motors. The device then converts the pulsed signals into a DC voltage that is proportional to the frequencies. The device then uses the relative values of the two DC voltages to control the speed of the second motor. Based on this disclosure in Arthur et al., the Office Action contends that the "monitoring" and "affecting" aspects of the Applicants' claimed invention are clearly taught by Arthur et al.

Applicants respectfully submit that the device of Arthur et al. being referred to in paragraph 1 of the Office Action is either a rate meter 44, 47 or a tachometer that generates a voltage proportional to the speed of the motor and feeds that voltage into a comparator device. Accordingly, the "device" referred to in the Office Action as taught by

Arthur et al. is actually the controller for the slaved motion control motors. As illustrated in Fig. 2 of Arthur et al., and discussed at column 4, lines 34-68, rate meter circuits 44, 47 are connected through a comparator device 46 and an amplifier 54 to a slaved motor 48. Accordingly, Arthur et al. does not disclose a plurality of devices for monitoring and a plurality of devices for affecting parameters of the rod maker, the tipper and/or the cigarettes being manufactured, wherein one or more of the monitoring devices and the parameter affecting devices both monitors and affects parameters, as well as a separate controller for controlling the plurality of devices on the tipper and the rod maker, including varying one or more parameters of the rod maker, the tipper and/or the cigarettes being manufactured, in response to conditions monitored by one or more of the devices. The rate meters/comparator device disclosed by Arthur et al. receives the pulsed outputs from pick-up devices, compares the voltages, and produces an output, such that these "devices" are also the "controller". Therefore, Arthur et al. fails to disclose or suggest a separate controller that controls a plurality of the "devices" in response to conditions monitored by one or more of the devices.

Applicants refer to page 37, lines 6-20 of the present application, wherein it is explained that the devices connected to the field bus may be similar to conventional devices with the addition of a processor whose function is to code information for transmission and to decode messages that the device needs to receive. As further explained in the specification at page 37, lines 21-37, and shown in Fig. 30, a field bus 500 connects six main system blocks that include blocks of sensors, pneumatic valves, variable speed drives for a picker/winnower, large and small fans and tobacco return, glue area sensors, pneumatic valve clutches, pneumatic auto cleaning valves, etc. These devices that are connected to a field bus are able to both monitor and affect parameters as a result of the processors that are incorporated into the devices to code information for transmission and to decode messages that the device needs to receive. In contrast to the disclosure in Arthur et al., Applicants' independent Claim 1 sets forth a novel combination of features including a plurality of devices that monitor and a plurality of devices that affect parameters, a controller for controlling the plurality of devices in response to conditions monitored by

one or more of the devices, and the plurality of devices and the controller each being connected to a field bus.

Applicants further submit that the slaved motors such as slave motor 48 disclosed in Arthur et al. are all motion control devices for driving parts of the cigarette making machine or filter attachment machine. Applicants respectfully submit that the claimed plurality of devices for monitoring and plurality of devices for affecting parameters of the rod maker, the tipper and/or the cigarettes being manufactured are different devices than the servo motors, which are provided for motion control of the machine. The claims are interpreted in light of the specification, and Applicants submit that the specification makes it clear that the devices which are connected to the field bus along with the controller, and which monitor and affect parameters of the rod maker, the tipper and/or the cigarettes being manufactured are different than the motion control devices such as the slaved motors referred to in Arthur et al. Further evidence of this distinction is provided by the doctrine of claim differentiation, since dependent Claim 2 further limits the novel combination of features in independent Claim 1 by further reciting a plurality of synchronous motors controlled by a motion controller. As explained in the specification at page 37, line 21-page 38, line 20, and shown in Fig. 30, the field bus 500 connects six main system blocks that include sensor blocks, pneumatic valves, variable speed drives for a picker/winnower, large and small fans, tobacco return, glue area sensors, pneumatic valve clutches and pneumatic auto cleaning valves. A motion controller 557 is connected to a central controller 550, but is not connected to the field bus 500. Therefore, as explained at page 38, lines 16-20, operating parameters input via the human/machine interfaces (HMIs) are received first by the central controller, which can then send them to the motion controller if appropriate. Control of speed and phase of the synchronized motors is separate from the HMI functions.

For at least the above reasons, Applicants respectfully submit that the novel combination of features claimed in independent Claim 1 is neither disclosed nor suggested in Arthur et al.

Independent Claim 19 is also directed to a cigarette manufacturing apparatus, comprising a novel combination of features that include a tobacco rod maker, a tipper and

a transfer apparatus. The tipper and the rod maker comprise a plurality of devices for monitoring and a plurality of devices for affecting parameters of the rod maker, the tipper and/or the cigarettes being manufactured, wherein one or more of said monitoring devices and said parameter affecting devices both monitors and affects parameters. A first controller controls the plurality of devices on the tipper and the rod maker, including varying parameters of a rod maker, the tipper and/or the cigarettes being manufactured, in response to conditions monitored by one or more of the devices, and a second controller provides the tipper, rod maker and cigarette information to an operator as well as communicating input data from the user to one or both of the first and second controllers.

Applicants refer again to the Office Action's reliance upon the rate meter/comparator of Arthur et al. for a disclosure of a device that both monitors and affects parameters, and submit that this disclosure in Arthur et al. does not anticipate the novel combination of features claimed in independent Claim 19 wherein each of the tipper and the rod maker comprises a plurality of devices for monitoring and a plurality of devices for affecting parameters, a first controller controls the plurality of devices, including varying parameters of the rod maker, the tipper and/or the cigarettes being manufactured, in response to conditions monitored by one or more of the devices, and a second controller provides the tipper, rod maker and cigarette information to an operator and communicates input data from the user to one or both of the first and second controllers. Applicants further submit that the control console 23 of Arthur et al. is only disclosed to control various motors that provide motion control for the cigarette making machine and filter attachment machine. Arthur et al. provides absolutely no disclosure or suggestion of the novel combination of features claimed in independent Claim 19 since the control console 23 simply receives signals from a pick-up device 22 and controls the speed and rotation of various independent motors so as to synchronize or slave those motors to a cut-off drive motor.

As discussed above with regard to independent Claim 1, the claimed plurality of devices for monitoring and affecting parameters of the rod maker, the tipper and/or the cigarettes being manufactured, when read in light of the specification, are clearly different than the motion control devices such as those relied upon in Arthur et al. Furthermore,

Arthur et al. provides absolutely no disclosure or suggestion that the control console 23 can provide tipper, rod maker and cigarette information to an operator and can communicate input data from the user to one or both of first and second controllers. Applicants submit that these features are not taught by a general control console or display screen for controlling machine functions. For at least the above reasons, Applicants respectfully submit that independent Claim 19 is also not anticipated by Arthur et al.

Independent Claim 35 is directed to a method of controlling the manufacture of cigarettes by an apparatus comprising a tobacco rod maker and tipper interconnected by a rod transfer apparatus. The method comprises a novel combination of steps including providing a field bus and a machine controller connected to the field bus, connecting a plurality of devices to the field bus for monitoring and a plurality of devices for affecting parameters of the rod maker, the tipper and/or the cigarettes being manufactured, with one or more of the monitoring devices and the parameter affecting devices both monitoring and affecting parameters. The field bus is monitored from the controller for data from the devices, and automatic adjustments are made to one or more parameters of the tipper or the rod maker in accordance with the information content of the data received.

As discussed above with regard to independent Claims 1 and 19, Applicants respectfully submit that the rate meter/comparator "device" of Arthur et al., which is actually part of the "controller" for the motion control servo motors, does not provide data to a field bus that is then monitored by a machine controller connected to the field bus, wherein the "device" both monitors and affects parameters of the rod maker, the tipper and/or the cigarettes being manufactured, and automatically adjusting one or more parameters of the tipper or rod maker in accordance with the information content of the data received.

For at least the above reasons, Applicants submit that independent Claim 35 is patentable over Arthur et al.

Independent Claim 47 is directed to a cigarette manufacturing apparatus comprising a novel combination of features that include a tobacco rod maker, a tipper and a transfer apparatus. A plurality of synchronized motors are also provided for driving a respective operation in the tipper and the rod maker. Independent Claim 47 further includes a

plurality of devices for monitoring and a plurality of devices for affecting parameters of the rod maker, the tipper and/or the cigarettes being manufactured, wherein one or more of the monitoring devices and the parameter affecting devices both monitor and affect parameters. A motion control device controls the plurality of synchronized motors, and a system is provided for controlling the plurality of devices on the tipper and the rod maker, including varying one or more parameters of the rod maker, the tipper and/or the cigarettes being manufactured in response to conditions monitored by one or more of the devices, and the motion control devices are also connected to the system controller. Furthermore, independent Claim 47 includes the plurality of devices, a field bus, and a controller each being connected to a communications network.

As discussed above, the devices of Arthur et al. that are relied upon for a disclosure of devices that monitor and affect parameters, are the rate meter/comparators that govern the speed of slaved motors making up the motion control system. Accordingly, Arthur et al. does not disclose the novel combination of features claimed in independent Claim 47, including a plurality of synchronized motors and a further plurality of devices for monitoring and affecting parameters. Arthur et al. also does not disclose a system for controlling the plurality of devices that monitor and affect parameters in response to conditions monitored by one or more of the devices, as well as connecting motion control devices to the system controller.

For at least the above reasons, Applicants submit that independent Claim 47 is patentable over Arthur et al.

Independent Claim 48 is directed to a cigarette manufacturing apparatus comprising a novel combination of features that include a tobacco rod maker, a tipper and a transfer apparatus. Each of the tipper and the rod maker comprises a plurality of devices for monitoring and a plurality of devices for affecting parameters of the rod maker, the tipper and/or the cigarettes being manufactured, wherein one or more of the monitoring devices and the parameter affecting devices both monitors and affects parameters. The plurality of devices are coupled to a control network along with a first controller, which is also coupled to the control network, for controlling the plurality of devices on the tipper and the rod maker. A second controller is coupled to the first controller and includes a human/machine

interface (HMI) for providing tipper, rod maker and cigarette information to an operator and for communicating input data from the user to the first controller. As discussed above with regard to independent Claim 19, Applicants respectfully submit that independent Claim 48 is patentable for all of the same reasons as independent Claim 1, and is further patentable over Arthur et al. since Arthur et al. provides absolutely no disclosure or suggestion that the control console 23 can provide tipper, rod maker and cigarette information to an operator and can communicate input data from the user to the first controller which is connected to the control network for controlling the plurality of devices.

For at least the above reasons, Applicants respectfully submit that all independent Claims 1, 19, 35, 47 and 48, and hence dependent Claims 2-6, 8-16, 18, 20-29, 31-34, 36-43, 45-46 and 49-50, are patentable.

Applicants further submit that all rejections under 35 U.S.C. § 103 should be withdrawn since none of the secondary references to Wilkinson et al., Official Notice, or Lorenzen, overcome the above-noted deficiencies in the primary reference to Arthur et al.

Conclusion

For at least the foregoing reasons, Applicants respectfully submit that the present patent application is in condition for allowance. An early indication of the allowability of the present patent application is therefore respectfully solicited.

If Examiner Jarrett believes that a telephone conference with the undersigned would expedite passage of the present patent application to issue, the Examiner is invited to call Applicants' representative at the number below.

Respectfully submitted,

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